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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/944,589	09/04/2001	Takayuki Norimatsu	Q66012	1652

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EXAMINER

JOYCE, WILLIAM C

ART UNIT	PAPER NUMBER
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3682

DATE MAILED: 07/20/2004

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

09/944,589

Applicant(s)

NORIMATSU, TAKAYUKI

Examiner

William C. Joyce

Art Unit

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --
Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 22 December 2003.
2a) ☐ This action is FINAL. 2b) ☒ This action is non-final.
3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-12 is/are pending in the application.
4a) Of the above claim(s) _____ is/are withdrawn from consideration.
5) ☐ Claim(s) _____ is/are allowed.
6) ☒ Claim(s) 1-12 is/are rejected.
7) ☐ Claim(s) _____ is/are objected to.
8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
a) ☒ All b) ☐ Some * c) ☐ None of:
1. ☒ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. _____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☐ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
Paper No(s)/Mail Date _____.
4) ☐ Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____.
5) ☐ Notice of Informal Patent Application (PTO-152)
6) ☐ Other: _____.

DETAILED ACTION

This Office Action is in response to the amendment filed December 22, 2003 for the above identified patent application.

Claim Rejections - 35 USC § 112

1. The following is a quotation of the first paragraph of 35 U.S.C. 112:

The specification shall contain a written description of the invention, and of the manner and process of making and using it, in such full, clear, concise, and exact terms as to enable any person skilled in the art to which it pertains, or with which it is most nearly connected, to make and use the same and shall set forth the best mode contemplated by the inventor of carrying out his invention.

2. Claims 1-12 are rejected under 35 U.S.C. 112, first paragraph, as containing subject matter which was not described in the specification in such a way as to enable one skilled in the art to which it pertains, or with which it is most nearly connected, to make and/or use the invention.

The instant disclosure defines an encoder formed as an elastic member made of a base material mixed with a powder of magnetic material, wherein the claimed single pitch deviation and the claimed magnetic flux density of the encoder is obtained by selecting a material for the base rubber material, a material for the powder of the magnetic material, and the mixing ratio thereof. It is not entirely clear applicant had possession of the claimed device because the disclosure fails to clearly identify a specific example of materials and mixing ratios thereof in forming the encoder so as to obtain the claimed single pitch deviation and magnetic flux density. Accordingly, one in the art could not produce the claimed device without undue experimentation.

Examiner notes the encoder can be made of a heat resistant nitrile rubber, acrylic rubber, or fluorine containing rubber, mixed with a powder of ferrite (see first full paragraph of page 11 of the disclosure), however applicant must provide a specific example of materials and mixing ratios thereof such that one in the art could produce the claimed device without undue experimentation. The mere suggestion that an encoder can be formed with the claimed properties by mixing a number of recited materials is not sufficient because, for example, each combination of materials used in making the encoder may have a specific mixing ratio which may be difficult to reproduce by one in the art. Since applicant has not clearly disclosed the mixing ratio and materials needed in obtaining the claimed encoder, it would be difficult for one in the art to make the claimed encoder member without undue experimentation.

Examiner notes applicant's declaration under Rule 132 filed March 18, 2004. The declaration states that one of ordinary skill in the art would be able to achieve an encoder having a mixing ratio of approximately 85-90% wt% magnetic material, and 10-15% wt% elastic member without undue experimentation because of the teaching found in the handbook entitled "Knack of Selecting Magnetic Material." This argument is not persuasive because the submitted partial translation (filed 3/22/04) of the above noted handbook does not appear to be directed to a wheel bearing assembly, or an encoder having a series of magnetic poles of opposite polarities.

Accordingly, the original disclosure fails to describe the wheel bearing assembly in such a way as to enable one skilled in the art to which it pertains, or with which it is most nearly connected, to make and/or use the invention.

Claim Rejections - 35 USC § 103

3. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

4. Claims 1-12 are rejected, as understood, under 35 U.S.C. 103(a) as being unpatentable over Alff (US Patent 5,622,437) in view of applicant's prior art admission (filed 3/18/04) based on the handbook entitled "Knack of Selecting Magnetic Material."

Assuming one in the art would could produce the claimed encoder assembly based on the teachings of the handbook entitled "Knack of Selecting Magnetic Material" (see papers 13 and 14), an alternative rejection is given below.

Alff discloses a wheel bearing assembly comprising: a sealing member for sealing an annular space between inner and outer race members and a magnetized encoder (7) mounted to the inner member. Referring to column 2, lines 27-36, Alff discloses that the sealing device with an integrated encoding device is described in U.S. Patent 5,431,413. Accordingly, the magnetized encoder is formed of elastomer material loaded with magnetic particles.

Alff does not disclose the encoder having the claimed properties when subjected to the claimed thermal endurance test, but it was known to form a magnetic member with the disclosed mixing ratios. Applicant's declaration under Rule 132 (filed March 18, 2004) states that one of ordinary skill in the art would be able to achieve an encoder

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having a mixing ratio of approximately 85-90% wt% magnetic material, and 10-15% wt% elastic member without undue experimentation. Accordingly, the known mixing ratio of magnetic material with elastic material inherently produces the claimed single pitch deviation and magnetic flux density. It would have been obvious to one of ordinary skill in the art at the time the invention was made to form the encoder member of Alff with a mixing ratio of approximately 85-90% wt% magnetic material and 10-15% wt% elastic material, in view of applicant's prior art admission based on the handbook entitled "Knack of Selecting Magnetic Material," motivation being to form a magnetic member having high dimensional precision.

With respect to claims 6 and 10, Alff does not disclose the elastomer material as nitrile rubber, acrylic rubber, and fluorine rubber. It would have been obvious to one of ordinary skill in the art at the time the invention was made to form the encoder with one of the claimed materials, since it has been held to be within the general skill of a worker in the art to select a known material on the basis of its suitability for the intended use as a matter of obvious design choice. In re Leshin, 125 USPQ 416.

With respect to claims 7-8, Alff appears to illustrate an end cover portion configured to cover a radially outer edge portion of the radial upright portion of the first sealing plate (claim 7) and an outer end of the cylindrical portion of the second sealing plate having a wall thickness smaller than a remaining part of the cylindrical portion of the second sealing plate (claim 8).

Response to Arguments

Applicant's arguments filed March 18, 2004 are not persuasive. Specifically, the original specification does not disclose a specific example of the materials and mixing ratios thereof in forming the encoder so as to obtain the claimed single pitch deviation and magnetic flux density. Accordingly, one in the art could not produce the claimed device without undue experimentation.

Examiner notes applicant's declaration under Rule 132 filed March 18, 2004. The declaration states that one of ordinary skill in the art would be able to achieve an encoder having a mixing ratio of approximately 85-90% wt% magnetic material, and 10-15% wt% elastic member without undue experimentation because of the teaching found in the handbook entitled "Knack of Selecting Magnetic Material." This argument is not persuasive because the submitted partial translation (filed 3/22/04) of the above noted handbook does not appear to be directed to a wheel bearing assembly, or an encoder having a series of magnetic poles of opposite polarities.

Alternatively, if one in the art would be able to achieve an encoder having a mixing ratio of approximately 85-90% wt% magnetic material, and 10-15% wt% elastic member without undue experimentation because of the teaching found in the handbook entitled "Knack of Selecting Magnetic Material" (see paper # 13 and 14), the claims are properly rejected under 35 USC 103. If the mixing ratio was known, then the claimed properties would be inherent and therefore properly rejected under 35 USC 103.

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Any inquiry concerning this communication or earlier communications from the examiner should be directed to William C. Joyce whose telephone number is (703) 305-5114. The examiner can normally be reached on Monday - Thursday 7:30-5:00.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, David Bucci can be reached on (703) 308-3668. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

 7/9/04
William C. Joyce